Community Near-Port Modeling System (C-PORT)

The community near-PORT modeling system (C-PORT) is a screening-level air quality modeling system designed to be capable of identifying potential locations of elevated air pollution concentrations near ports. Developed in response to concerns initially expressed by EPA Region 4 regarding NEPA assessments supporting proposed port expansions (e.g., in response to expansion of the Panama Canal) and potential changes in the type of ships and related transportation modes (including shifts in energy use) that constitute the entire port operations, C-PORT now includes data from 22 seaports (mostly in the Southeastern U.S.), and has a map-based interface similar to the widely used Google Earth. As an easy to use alternative scenario screening tool, C-PORT can be used by a suite of decision-makers (including federal, state, and local governments, and/or port authorities, for example) as well as local stakeholders (such as community groups) who are concerned with the environmental impacts in and around ports, and who have interest in identifying mitigation options.

C-PORT has the ability to evaluate scenarios related to changes in port operations, such as port expansion, changing ship characteristics (e.g., size, number, and speed), traffic and rail use, or energy use. It is an easy-to-use desktop application to estimate potential impacts of alternative planning scenarios and to prioritize in-depth, follow-up actions (e.g., research, outreach, and exposure or emissions reductions activities). C-PORT can be used to visualize air quality changes that would result from user-defined planning ("what if") scenarios. Users can run the models with the included data or input their own locally-derived values. Potential uses include:

- Examine "what if" scenarios on how changes such as traffic volume, fleet mix, vehicle speed, or port equipment electrification impact emissions
- Target outreach, education, and possible intervention for highly impacted community areas
- Facilitate citizen science efforts to conduct air quality measurements by identifying areas for sensor measurements
- Identify potentially exposed populations to target resources and exposure-reduction efforts
- Estimate potential effects of port expansion on air quality in nearby communities and along transportation routes, which may support the need for more detailed modeling or measurement efforts.

C-PORT is on track for a beta release to begin in July of 2016. The goal of the beta release is to solicit user feedback on the usability of the existing model, identify any desired functionality not currently in the model, and evaluate the model output. Following beta release, C-PORT will undergo peer review before final release in the spring of 2017.